

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (currently amended) A vehicle brake system comprising:

a brake actuator;

a brake controller operative to control said brake actuator;

at least one position sensor which senses a current position of at least one moveable brake component and provides a current position signal indicative of the current position of the at least one moveable brake component to said brake controller; ~~and~~

wherein said brake controller is operative to cause application of said brake actuator based at least in part upon a comparison of a position indicative command received by said brake controller, said position indicative command indicative of a commanded position to which the at least one moveable brake component is to be moved in order to achieve a demanded level of braking indicated by a commanded brake torque, with the current position signal; and

a command converter which converts the commanded brake torque into a commanded friction force by dividing the commanded brake torque with an effective disc brake radius, which converts the commanded friction force into a

commanded clamping force by dividing the commanded friction force by a disc/pad friction coefficient, and which converts the commanded clamping force into the position indicative command either: (i) by employing a known relationship between brake pad position versus clamping force, or (ii) by dividing the commanded clamping force by a brake elasticity and adding a slack position.

2. (original) The system of Claim 1 wherein said brake actuator comprises a self-energizing brake actuator.

3. (original) The system of Claim 1 wherein said brake actuator comprises an electromechanical brake actuator, actuation of which is at least partially achieved employing an electric motor.

4. (original) The system of Claim 3 wherein the at least one moveable brake component comprises an output shaft of the electric motor.

5. (previously presented) The system of Claim 4 wherein the output shaft is rotatably moveable, wherein the current position signal is indicative of a current rotational position of the output shaft, and wherein the position indicative command is indicative of a commanded rotational position of the output shaft.

6. (original) The system of Claim 1 wherein the at least one moveable brake component comprises at least one of a brake pad and a brake pad carrier.

7. (previously presented) The system of Claim 6 wherein the at least one of a brake pad and a brake pad carrier is axially moveable, wherein the current position signal is indicative of a current axial position of the at least one of a brake pad and a brake pad carrier, and wherein the position indicative command is indicative of a commanded axial position of the at least one of a brake pad and a brake pad carrier.

8 - 10. (cancelled)

11. (currently amended) The system of Claim 1 ~~8~~ further comprising a parameter estimator for estimating, based upon sensor input, at least one parameter used by the command converter ~~to convert the primary command into the position indicative command~~, and for supplying the estimated parameter to the command converter.

12. (original) The system of Claim 11 wherein the at least one parameter comprises at least one of an effective disc brake radius parameter, a pad/disc coefficient of friction parameter, a brake elasticity parameter, and a slack position parameter.

13. (original) The system of Claim 11 wherein the sensor input is indicative of at least one of the following: a clamping force, a friction force, a brake torque, the current position of the at least one moveable brake component, a velocity of a brake disc, an acceleration of a brake disc, a motor current, a motor voltage and a motor torque.

14. (currently amended) A vehicle brake system comprising:

an electromechanical self-energizing brake actuator, actuation of which is at least partially achieved employing an electric motor;

a brake controller operative to control said brake actuator;

at least one position sensor which senses a current position of at least one moveable brake component and provides a current position signal indicative of the current position of the at least one moveable brake component to said brake controller;

a command converter for ~~converting a primary command into~~ determining a position indicative command, said position indicative command indicative of a commanded position to which the at least one moveable brake component is to be moved in order to achieve a demanded level of braking indicated by a commanded brake torque, and providing the position indicative command to said brake controller, wherein said command converter converts the commanded brake torque into a commanded friction force by dividing the commanded brake torque with an effective disc brake radius, converts the commanded friction force into a commanded clamping force by dividing the commanded friction force by a disc/pad friction coefficient, and converts the commanded clamping force into the position indicative command either: (i) by employing a known relationship between brake pad position versus clamping force, or (ii) by dividing the commanded clamping force by a brake elasticity and adding a slack position;

a parameter estimator for estimating, based upon sensor input, at least one parameter used by said command converter ~~to convert the primary command into the position indicative command~~, and for supplying the estimated parameter to said command converter; and

wherein said brake controller is operative to cause application of said brake actuator based at least in part upon a comparison of the position indicative command received by said brake controller with the current position signal.

15. (original) The system of Claim 14 wherein the at least one moveable brake component comprises an output shaft of the electric motor.

16. (previously presented) The system of Claim 15 wherein the output shaft is rotatably moveable, wherein the current position signal is indicative of a current rotational position of the output shaft, and wherein the position indicative command is indicative of a commanded rotational position of the output shaft.

17. (original) The system of Claim 14 wherein the at least one moveable brake component comprises at least one of a brake pad and a brake pad carrier.

18. (previously presented) The system of Claim 17 wherein the at least one of a brake pad and a brake pad carrier is axially moveable, wherein the current position signal is indicative of a current axial position of the at least one of a brake pad and a brake pad carrier, and wherein the position indicative command is indicative of a commanded axial position of the at least one of a brake pad and a brake pad carrier.

19. (cancelled)

20. (cancelled)

21. (original) The system of Claim 14 wherein the at least one parameter comprises at least one of an effective disc brake radius parameter, a pad/disc coefficient of friction parameter, a brake elasticity parameter, and a slack position parameter.

22. (original) The system of Claim 21 wherein the sensor input is indicative of at least one of the following: a clamping force, a friction force, a brake torque, the current position of the at least one moveable brake component, a velocity of a brake disc, an acceleration of a brake disc, a current of the motor, a voltage of the motor and a torque of the motor.

23. (currently amended) A method of controlling a vehicle brake, said method comprising the steps of:

receiving a current position signal indicative of a current position of at least one moveable brake component from a position sensor;

receiving an indication of a commanded brake torque indicative of a  
~~position indicative command indicative of a commanded position to which the at~~

~~least one moveable brake component is to be moved in order to achieve a~~  
demanded level of braking;

converting the commanded brake torque into a commanded friction force by  
dividing the commanded brake torque with an effective disc brake radius;

converting the commanded friction force into a commanded clamping force  
by dividing the commanded friction force by a disc/pad friction coefficient,

converting the commanded clamping force into a position indicative  
command either: (i) by employing a known relationship between brake pad  
position versus clamping force, or (ii) by dividing the commanded clamping force  
by a brake elasticity and adding a slack position;

comparing the position indicative command with the current position signal;  
and

causing application of a brake actuator based at least in part upon the  
comparison between the position indicative command and the current position  
signal.

24. (original) The method of Claim 23 wherein the brake actuator comprises a  
self-energizing brake actuator.



25. (original) The method of Claim 23 wherein the brake actuator comprises an electromechanical brake actuator, actuation of which is at least partially achieved employing an electric motor.

26. (original) The method of Claim 25 wherein the at least one moveable brake component comprises an output shaft of the electric motor.

27. (previously presented) The method of Claim 26 wherein the output shaft is rotatably moveable, wherein the current position signal is indicative of a current rotational position of the output shaft, and wherein the position indicative command is indicative of a commanded rotational position of the output shaft.

28. (original) The method of Claim 23 wherein the at least one moveable brake component comprises at least one of a brake pad and a brake pad carrier.

29. (previously presented) The method of Claim 28 wherein the at least one of a brake pad and a brake pad carrier is axially moveable, wherein the current position signal is indicative of a current axial position of the at least one of a brake pad and a brake pad carrier, and wherein the position indicative command is indicative of a

commanded axial position of the at least one of a brake pad and a brake pad carrier.

30 - 32. (cancelled)

33. (currently amended) The method of Claim ~~23~~ 30 further comprising the step of estimating, based upon sensor input, at least one parameter used during said converting steps ~~to convert the primary command into the position indicative command.~~

34. (original) The method of Claim 33 wherein the at least one parameter comprises at least one of an effective disc brake radius parameter, a pad/disc coefficient of friction parameter, a brake elasticity parameter, and a slack position parameter.

35. (original) The method of Claim 33 wherein the sensor input is indicative of at least one of the following: a clamping force, a friction force, a brake torque, the current position of the at least one moveable brake component, a velocity of a brake disc, an acceleration of a brake disc, a motor current, a motor voltage and a motor torque.

36. (currently amended) A method of controlling a vehicle brake, said method comprising the steps of:

~~receiving a primary command~~ an indication of a commanded brake torque indicative of a demanded level of braking;

~~converting the primary command into a position indicative command indicative of a commanded position to which at least one moveable brake component is to be moved in order to achieve a demanded level of braking;~~

converting the commanded brake torque into a commanded friction force by dividing the commanded brake torque with an effective disc brake radius;

converting the commanded friction force into a commanded clamping force by dividing the commanded friction force by a disc/pad friction coefficient,

converting the commanded clamping force into a position indicative command either: (i) by employing a known relationship between brake pad position versus clamping force, or (ii) by dividing the commanded clamping force by a brake elasticity and adding a slack position;

estimating, based upon sensor input, at least one parameter used during said converting steps ~~to convert the primary command into the position indicative command;~~

receiving a current position signal indicative of a current position of the at least one moveable brake component from a position sensor;

comparing the position indicative command with the current position signal;  
and

causing application of a self-energizing brake actuator based at least in part upon the comparison between the position indicative command and the current position signal.

37. (original) The method of Claim 36 wherein the brake actuator comprises an electromechanical brake actuator, actuation of which is at least partially achieved employing an electric motor.

38. (original) The method of Claim 37 wherein the at least one moveable brake component comprises an output shaft of the electric motor.

39. (previously presented) The method of Claim 38 wherein the output shaft is rotatably moveable, wherein the current position signal is indicative of a current rotational position of the output shaft, and wherein the position indicative command is indicative of a commanded rotational position of the output shaft.

40. (original) The method of Claim 36 wherein the at least one moveable brake component comprises at least one of a brake pad and a brake pad carrier.

41. (previously presented) The method of Claim 40 wherein the at least one of a brake pad and a brake pad carrier is axially moveable, wherein the current position signal is indicative of a current axial position of the at least one of a brake pad and a brake pad carrier, and wherein the position indicative command is indicative of a commanded axial position of the at least one of a brake pad and a brake pad carrier.

42. (cancelled)

43. (cancelled)

44. (original) The method of Claim 36 wherein the at least one parameter comprises at least one of an effective disc brake radius parameter, a pad/disc coefficient of friction parameter, a brake elasticity parameter, and a slack position parameter.

45. (original) The method of Claim 36 wherein the sensor input is indicative of at least one of the following: a clamping force, a friction force, a brake torque, the current position of the at least one moveable brake component, a velocity of a brake disc, an acceleration of a brake disc, a motor current, a motor voltage and a motor torque.